



# **GRANITE STATE CLEAN CITIES COALITION PROGRAM PLAN**

## **DEVELOPMENT AND GROWTH OF THE ALTERNATIVE FUEL MARKET**

Prepared by

**Timeless Technologies  
And  
The Granite State Clean Cities Executive Committee**

Prepared for

**United States Department of Energy (USDOE)**  
*as part of an application for official USDOE Clean Cities designation*

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## *Executive Summary*

*The Granite State Clean Cities Coalition, consisting of private and public sector organizations from throughout New Hampshire, has prepared this comprehensive plan for the US Department of Energy Clean Cities Program, detailing the steps necessary to advance the use of alternatively fueled vehicles (AFVs). Both private and public use of AFVs will be targeted, with emphasis in the two sectors of the state with the most intense vehicle use: the Seacoast and the Merrimack Valley. These areas are characterized by having the highest vehicle population density in the state with approximately 50 million vehicles traveling on the interstate highways per year. These areas also have a history of the poorest air quality in the state and have been designated marginal to serious ozone non-attainment areas by the Environmental Protection Agency (EPA). The incorporation of AFVs into private and public sector transportation fleets will be facilitated by the identification of niche markets, outreach and education, and commitments from coalition members to double the number of AFVs in New Hampshire from 219 to 472 by 2006.*

*Stakeholders from the coalition will serve as members of working groups that will address specific topics important to the overall implementation of GSCCC, such as deployment of alternative fueled vehicles, development of a state-wide alternative fuel refueling infrastructure, project funding, educational materials, legislation and policy development, and general public outreach. The products of these working groups will be aggregated into a 'GSCCC Implementation Plan' that will serve as a guide to the development and implementation of AFV projects. In this way, the GSCCC will seek to improve air quality, reduce the state's reliance on foreign fossil fuels, and foster sustainable economic development for this emerging industry. Replacement of existing diesel and gasoline vehicles with vehicles running on compressed natural gas (CNG), Liquid Petroleum Gas (LPG), Electricity (EV) or other approved alternative fuels will not only help improve the air quality in New Hampshire, but also have a positive, long lasting, effect on the entire northeast region.*

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# Granite State Clean Cities Coalition Program Plan

## Development and Growth of the Alternative Fuel Market

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### I. GENERAL INFORMATION

This document has been created to provide a guide for successful deployment of clean, alternatively fueled vehicles in the Granite State Clean Cities Coalition fleets. It includes organizational structure, mission, goals and objectives necessary for a smooth planning and decision making process. This guide focuses on the entire state of New Hampshire rather than a single city. This was decided upon due to the large percentage of rural cities and towns that make up the bulk of the state's population.

#### A. NATIONAL CLEAN CITIES PROGRAM

Clean Cities is a program sponsored by the U.S Department of Energy which is designed to encourage the use of alternative fuel vehicles (AFVs) and their supporting infrastructure throughout the nation. By encouraging AFV use, the Clean Cities program will help achieve energy security and environmental quality goals at both the national and local levels. Unlike traditional command-and-control programs, the Clean Cities program takes a unique, voluntary approach to AFV development, working with coalitions of local stakeholders to help develop the AFV industry and integrate this development into larger planning processes.

#### B. PURPOSE AND MISSION STATEMENT

The fundamental purpose of the Clean City Coalition is to create a favorable market-driven environment that encourages the availability, procurement, and deployment of vehicles that meet the fuel standards as set forth by the U.S. Energy Policy Act of 1992. Creating a steady growth in AFVs and associated infrastructure will displace the use of more polluting conventional fuel vehicles throughout the Granite State and help our entire region to be less reliant on fossil fuel. It will also expand clean corridor creation within the New England region by linking alternative fuel infrastructure between contiguous states. ***Our overall mission is to plan and implement projects which promote the use of alternative fuel vehicles in the State of New Hampshire to improve air quality, increase national energy security by decreasing dependence on foreign oil, and foster sustainable economic development in this emerging industry.*** The buy-in of this purpose and mission statement by coalition members will codify the process by which we will see and measure expansion of AFVs throughout the state. Utilizing creative public/private partnerships will allow the coalition to be a responsible, committed unified organization able to stay focused on this purpose and mission.

### C. AREA BACKGROUND OF THE GRANITE STATE



New Hampshire is made up of seven distinctly unique regions. At the very top of the state is the **Great North Woods**, a place of pristine beauty with acres of undeveloped woods, lakes, rivers and streams. Next, stretching from east to west in the upper midsection of New Hampshire is the **White Mountains** region, home of the 780,000 acre White Mountain National Forest and the scenic Kancamagus Highway. At the center of the state is the **Lakes Region** with a landscape of rolling hills and mountains dotted by 273 lakes and ponds. To the west, the **Dartmouth-Lake Sunapee Region** named for Dartmouth, the Ivy League college in Hanover, and Sunapee, the lake and mountain which provide so much recreation year round. Easily accessed by I-93, I-89 and I-91, the region includes some of the state's most peaceful and picturesque countryside. Tucked in the southwest corner of New Hampshire is the picturesque **Monadnock Region**, home of Yankee Magazine and the inspiration of Thornton Wilder's *Our Town*. The **Merrimack Valley** is the most populated region with the cities of Nashua, Manchester and Concord. On the **Seacoast** is the home of the historic port city of Portsmouth, nearby Dover, Durham, home of the University of New Hampshire and 18 miles of coastline to explore.

Of the seven regions, there are two that are characterized as the most practical and almost ideal for near term Clean Cities planning. This is primarily due to the high vehicle density and daily miles traveled relative to other parts of the state. These target regions are the Merrimack Valley and the Seacoast. Five features make these the most attractive targets for our plan.

- \* Dense population with vehicle congestion: According to NH DOT automatic traffic recorder reports, the vehicle miles traveled (VMT) from 1998 to 2000 has increased in these regions by an average of 4% per year.
- \* Areas are not in attainment with federal air quality standards,
- \* Close proximity to contiguous states of Massachusetts, Maine and Vermont for clean corridor consideration,
- \* Non-mountainous terrain which enhances applicability to pure electric transportation alternatives as well as hybrid-electric alternatives, and
- \* There are fleets of sufficient size to meet economies of scale necessary for AFV applications.

#### The Merrimack Region



Home of three major cities-Concord, the state's capital, Manchester and Nashua-the Merrimack Valley Region is the most populated area of the state. Because of the explosive

growth in the population and employment of the cities and towns located in this region, the roads are becoming increasingly congested. Of any region in the state this one by far has the most vehicle population. Traffic vehicle counts from 1998 to 2000 show this region to carry between 15 and 38 million vehicles per year at each major interstate highway cross-section, with a change of +7% in two years. This is a very important reason to target this area as one of the primary focuses for the application of our Clean Cities Plan. It also makes the clean corridor concept achievable, since places like Boston Massachusetts, Providence Rhode Island and Portland Maine are less than 150 miles from any point within this particular region.

### **The Seacoast Region**



Like the Merrimack Valley, this region is very accessible to other major cities in contiguous and nearby states. Because of this and the dense population, it is the second primary target for our Clean Cities Plan. The change in vehicle population from 1998 to 2000 in this region (+10 % in two years) exceeds most other parts of the state. That, coupled with average yearly vehicle counts at major nodes of between 20 to 30 million vehicles, makes this an attractive location to focus AFV deployment.

The remaining five regions will not be forgotten or discounted. Vermont, a new member of the Clean Cities Coalition, and a contiguous state to New Hampshire is one of the most aggressive states in the region regarding alternative transportation development plans. This coupled with advancing technology; the northern and western regions of New Hampshire will be targeted as a secondary region as discussed in section 3 below, "Market Development Plan".

### **D. STATE AFV FLEET DEVELOPMENT**

In June of 1996, the New Hampshire Governor's Office of Energy and Community Services (ECS) received a Congestion Mitigation and Air Quality Improvement (CMAQ) grant to establish a state fleet of alternative fueled vehicles and develop a network of refueling stations (\$434,000, see Section I, page 9). The Alternative Fuel Vehicle Project (AFVP) was established to facilitate this grant. The AFVP managing group consists of participants from ECS, the New Hampshire Department of Environmental Services (DES) and the New Hampshire Department of Transportation (DOT). Through this group's efforts, a fleet of vehicles powered by electricity (EV), propane (LPG) and compressed natural gas (CNG) was procured for state agencies. These vehicles were used as standard state fleet vehicles as well as to highlight and demonstrate clean transportation technology through outreach programs. To date, the number of state owned vehicles that have displaced those running on conventional fossil fuels are 13 EV<sup>1</sup>, 1 LPG and 12 CNG. As part of this program, a fast fill CNG refueling station has been built and placed into operation at a NH DOT facility in the city of Concord, and three slow fill CNG stations have been installed in other locations. In addition, 13 Electric

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<sup>1</sup> 9 S-10 EVs from EPA settlement, and 4 Solectria Force EVs from CMAQ grant.

Charging stations/outlets have been installed at various state agencies. In September 1999, DES made an additional request for CMAQ funding to the NH DOT. This funding request was to increase the efforts to promote alternatively fueled vehicles beyond the state government and into the private sector. This funding request was turned down.

In November 1999, the AFVP began the planning process of reaching out to municipalities and the private sector to promote the acquisition and use of alternatively fueled vehicles and infrastructure. At the same time, ECS initiated internal meetings to discuss outreach strategy for creating a Clean Cities Coalition.

On February 1, 2000, the AFVP requested and received an additional \$160,000 in CMAQ grant money to purchase more dedicated AFVs within the state fleet. This provided the momentum for ECS and DES to begin contacting municipalities and private sector fleet managers to develop a membership and stakeholder list for the first Granite State Clean Cities Coalition (GSCCC) meeting.

In September 2000, ECS received \$75,000 from DOE under the Rebuild America Special Projects category with a focus on schools and school transportation, with one objective being the creation of a close working relationship between Clean Cities and Rebuild NH, which is well established and has projects in over 35 communities.

## **E. GRANITE STATE CLEAN CITIES COALITION DEVELOPMENT**

In the fall of 1999 the AFVP, led by ECS and DES, explored ways to conduct outreach to municipalities and the private sector to promote the use of AFVs. It was determined that the most effective way of accomplishing this task was to form a Clean Cities Coalition and begin the process by which New Hampshire could become an active member of the DOE Clean Cities Program and ultimately become a designated Clean City state. Since the AFVP already had success in receiving grant monies to procure and deploy AFVs into the state fleet, the momentum to begin expansion of this effort already existed from their work started in 1996. ECS and DES became the lead agencies to start the formation of the coalition. They met with the DOE Region 1 office in December 1999 to learn more about the program and obtain materials to help guide the Granite State into the proper set of guidelines as developed by DOE since the beginning of the Clean Cities Program back in 1992.

Since the populated areas in New Hampshire are in the south-eastern section, where the ozone non-attainment areas exists, ECS and DES concentrated their coalition building effort in these regions: the Seacoast and the Merrimack Valley. The major cities within these regions include Portsmouth, Nashua, Manchester and Concord with surrounding smaller cities.

In February 2000, the GSCCC began holding stakeholder meetings in Nashua and Portsmouth, NH (See Attachment A.). Through these meeting it was determined that there were several key private sector fleets that have been utilizing AFV technologies for several years in the Granite State. These turned out to be a large delivery company and

several utilities and fuel providers. These AFV users also had infrastructure and maintenance facilities specifically tailored for their AFV fleets and therefore the beginnings of what we hope will be an infrastructure to interconnect the major cities of the state with AFV refueling and repair capabilities. Upon canvassing these firms and other potential players as recommended by DOE, the list of coalition stakeholders started to take shape and the fuel of choice by most was either CNG or LPG. Although the Granite State has a population of approximately 1 million, and is less industrialized than our neighbors to the south, its close proximity to states that have made major investments in AFVs has also helped to provide momentum to embrace alternative fuels.

Over the past five years, before the coalition was formally created, GSCCC stakeholders have helped jump-start the AFV market with various investments of time and money in this quickly evolving industry. The State Government has taken the lead in promoting alternative fuels by having a fleet of EVs, dedicated CNG and LPG vehicles distributed throughout their government agencies. They have installed refueling facilities for CNG in Concord and each of their 13 EVs has its own recharging station. The LPG vehicle can be refueled at any one of a dozen local refueling sites that already exist in the region. Local utility companies such as Energy North Propane have had their own fleet of LPG fueled vehicles for many years, and plans on expansion. UNH and Pease Tradeport have been able to budget funds and receive grant money to procure and deploy CNG vehicles within their campus/airport facilities. Timeless Technologies, a stakeholder and owner/operator of an EV, has received an award from the Propane Education and Research Council (PERC) of \$100,000 to help offset the cost of hybrid electric propane powered buses in New Hampshire. Many of the other stakeholders have a keen interest to pursue AFV technology and now that the GSCCC has been formed, regular meetings will provide a forum to discuss ways to leverage funds, put together partnerships, and manage projects to help expand the fleet and infrastructure as outlined in this document.

New Hampshire Technical Institute (NHTI), located in Concord, and the University of New Hampshire (UNH), located in Durham, are both stakeholders of the GSCCC. They have been investigating alternative fuels since the mid 1990s and own several vehicles utilizing electricity and CNG. Although they do not have a formal alternative fuels curriculum, or certification program, they have staff that are considerably experienced with these types of vehicles and perform their own maintenance as needed. Less than 100 miles from either of these is Wentworth Institute in Boston MA, that has a full certification program for Alternative Fuels at a cost of less than \$450 per person. The close proximity of this school will provide the necessary training outlet until similar programs are started at NHTI, UNH or other centers of higher learning in the Granite State.

## **F. AFV MARKET SITUATION TODAY**

The three primary alternative fuels used in the Granite State include natural gas, liquefied petroleum gas, and electricity. Use of biodiesel, ethanol, and others have been investigated and will continue as "potential" alternatives until economically viable. As

always, fuel use is based on fuel availability, which is a market driven issue.

- **Compressed Natural Gas (CNG)**

Over the last decade, natural gas pipelines have penetrated into the Seacoast and Merrimack Valley regions in sufficient quantity, so the prospect for expansion of CNG refueling stations between the targeted major cities is excellent. Although there are only 27 vehicles using this fuel in New Hampshire today, it is expected that use of this fuel will rapidly accelerate because several new fueling facilities are in the planning stages, and a half dozen stakeholders have committed to purchasing CNG vehicles when the stations come on line. Also, the vehicle types planned for this fuel will be mostly on the medium and heavy-duty side (vans and buses), so the air quality improvement will have greater impact than if they were straight light duty vehicles.

- **Propane (LPG)**

As in most rural states, the population of LPG refueling facilities began in the early 1970s when the last significant gasoline energy crisis occurred in the United States. Conversion of vehicles to run on LPG became very popular and as a result, LPG as a fuel for vehicular applications was added to an already expanding use for home heating and outdoor cooking equipment. This helped drive the market for refueling facilities that could accommodate vehicles of all types and sizes. We have currently identified 163 vehicles using this fuel in New Hampshire (more than any other alternative fuel by far), nearly all in fleet applications.

- **Electricity (EV and HEV)**

Electricity is probably the one fuel that is viable in every location that has a national grid system. The entire northeast, especially the megalopolis that runs from central NH down to central Virginia along the East Coast, has a well defined grid and can accommodate large numbers of electric vehicles, especially in the most densely populated areas.

Charging stations still need to be installed, but are similar to having an appliance hardwired in your home and can be accomplished quickly and at a reasonable cost. There are currently 16 all electric vehicles operating in New Hampshire. Range, charging time, winter heating, and hill climbing continue to be issues with pure EVs, however the advent of advanced hybrid technology has increased range capability and is proving to be one of the most efficient types of vehicles on the market.

An example of a hybrid vehicle under development that could have significant impact on fuel efficiency and emission improvements is a hybrid electric delivery van (CitiVan) utilizing a Capstone microturbine running on CNG as an auxiliary power unit and a battery electric drive system. The development of this vehicle is being managed by one of the GSCCC stakeholders, and when complete, delivery firms such as Federal Express, DHL, Airborne Express, USPS and UPS will be contacted in the

Seacoast and Merrimack regions regarding the availability of this new ultra clean delivery vehicle technology. It is also expected that some of the other stakeholders may want to embrace this hybrid technology, especially transit companies that have larger vehicles such as buses or paratransit vehicles.

The emerging hybrid electric vehicle industry has a much better chance of being successful in New Hampshire because the disadvantages of a pure electric are solved with this technology and the overall fuel efficiency is improved over straight liquid or gaseous ICE vehicles. Currently there are no hybrid electric vehicles running on approved alternative fuels operating in the state, but efforts to change that are underway and are discussed in Section I. below.

Even more economically beneficial with respect to gasoline equivalent gallon (GEG) costs is an all electric vehicle, but due to the lag in performance (range, speed of refueling, adequate winter heat) with conventional fuels, this technology has not been embraced by those who sell electricity as a fuel, namely the electric utility companies. This has been especially true in states like the Granite State due to relatively long distance of travel within service territories

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In an effort to assess the current alternative fuel situation in New Hampshire a fleet questionnaire was sent to stakeholders statewide asking for the size of their AFV fleet and fueling infrastructure. The fleet questionnaire revealed that the number of non-flex fuel AFVs in New Hampshire is 206. In addition to this there are flexible fuel vehicles in the State fleet that can run on either gasoline or E-85, but at the present time there are no ethanol refueling stations in New Hampshire. Of the 219 vehicles identified thus far, 1 is a CNG bi-fuel, meaning it can run on either gasoline or CNG. This State owned vehicle is refueled with CNG at a DOT owned station in Concord, so it is included in the totals as an AFV.

One of the largest primary AFV fleets in New Hampshire is one that is not EPAct mandated. It is not in the category of government or fuel provider, but instead a private company primarily operating throughout New England. This company is Schwans Sales Enterprises, Inc., and has 34 medium duty dedicated propane delivery trucks. This represents more than 90% of Schwans fleet and has helped Schwans to save many thousands of annual operating dollars.

Another major player in New Hampshire is Eastern Propane headquartered in Rochester. This fuel provider has in its Merrimack and Seacoast territories 31 delivery vehicles and 45 service vehicles running on LPG.

In fact, just about all the large propane supply companies are primary stakeholders and already have sizeable fleets operating on this fuel (See Section II.B.). This fuel is probably the most accessible of all the alternative fuels for fleet introduction as well as expansion in New Hampshire.

Thus the first players in New Hampshire to pursue alternative fuels were private companies. This was not initially done for environmental reasons, but instead for the economic benefit. Traditionally the cost of LPG or CNG per gasoline equivalent gallon (GEG) has always been less than conventional fuel. Companies that sell these fuels are especially sensitive to this fact and it has been highly advantageous to utilize their own fuel stocks for vehicle energy requirements. The fact that LPG and CNG are cleaner burning fuels than gasoline or diesel is a serendipitous result of the economic motivation that today has become a very important additional advantage.

## **G. EPA/ACT/CLEAN AIR ACT AMENDMENTS**

Under the current one hour National Ambient Air Quality Standard for ozone New Hampshire has four ozone non-attainments, the Cheshire non-attainment area (not classified), the Manchester Marginal non-attainment area, the Southern Serious non-attainment area, and the Seacoast Serious non-attainment area. These four areas incorporate the southern five counties of New Hampshire; Cheshire, Merrimack, Hillsborough, Rockingham, and Strafford. EPA has not yet imposed the proposed, more stringent 8 hour ozone standard, however New Hampshire anticipates that some areas of the state will remain in non-attainment under the new standard. On November 29, 2000 New Hampshire's two carbon monoxide non-attainment areas, the City of Manchester and the City of Nashua, were re-designated as attainment. New Hampshire has no particulate matter (PM) or sulfur dioxide (SO<sub>2</sub>) non-attainment areas.

Portions of the southern Merrimack and Seacoast regions of New Hampshire fall under EPA mandates. This affects federal, state and alternative fuel provider fleets. The GSCCC members affected by EPA are all in compliance with the mandate requiring alternative fuel vehicles. In most cases the requirements have been exceeded in numbers. This is especially true with the state government and propane fuel providers.

## **H. LOCAL AND STATE LAWS AND INCENTIVES**

### **STATE**

New Hampshire has modest incentives in effect to promote the use of alternative fuel vehicles within private fleets. The State has made purchase incentives of up to \$6,500 per vehicle available for state fleet vehicles.

### **UTILITIES/PRIVATE COMPANIES**

KeySpan Energy Delivery has both incentives for CNG vehicles and infrastructure. For the vehicles, they look at the annual projected mileage for a vehicle or group of vehicles to determine the rebate. Low-mileage vehicles might have a rebate of \$500 per vehicle whereas a high-mileage vehicle, i.e. airport shuttle van, could see a rebate close to \$3,000 per vehicle.

For refueling infrastructure, KeySpan works directly with qualified CNG station installers. If a station looks financially feasible, KeySpan will contribute a rebate directly to the station installer to offset the high cost of one of these stations. In Lexington Massachusetts, for example, KeySpan was able to offset the station cost by \$100,000. The station itself, including all equipment and installation, cost approximately \$650,000.

## **I. GRANTS AND FUNDING SITUATION**

In New Hampshire there traditionally have been two funding sources to help support the purchase and promotion of alternative fuel vehicles and infrastructure. Congestion Mitigation and Air Quality Improvement (CMAQ) funding has been available and accessed through the Federal Highway Administration with a conduit for fund transfer through the NH Department of Transportation. Funding has also been available through the U.S. Department of Energy with a conduit for fund transfer through the NH Governor's Energy Office and Community Services State Energy Plan (SEP).

In 1996 the State received a CMAQ grant for \$434,000. This was increased by another \$160,000 on February 1, 2000. These funds were used to specify, procure and deploy AFVs into the state fleet and procure refueling facilities. The State also used SEP and CMAQ funds to staff the effort at ECS and finance projects like a solar recharging station at the New Hampshire Technical Institute (NHTI). Transportation related programs have evolved to become a major effort at ECS since 1995.

In April 2000 a request for funding was made to the US DOE to place three-hybrid electric propane powered advanced vehicle buses in service. Although this project was turned down by DOE, \$100,000 was obtained from the Propane Education and Research Council (PERC) towards this project. Currently, ECS is in the process of seeking the funding necessary to procure these buses and place them into service before the PERC grant is terminated. Coalition members who are partners in this project are Cooperative Alliance for Seacoast Transportation (COAST), Timeless Technologies and the Governor's Office of Energy and Community Service.

In May 2001, U.S. Senator Bob Smith (R-NH), then Chairman of the Environment and Public Works Committee with jurisdiction over transportation and infrastructure issues, requested funding consideration from the Appropriations Subcommittee on Transportation for critical transportation projects. This funding request included \$1.54M for the Granite State Clean Cities Coalition to do clean bus projects in the Seacoast region of New Hampshire. In late November 2001 this funding request was passed at \$1 million.

## **II. ALTERNATIVELY FUELED VEHICLES IN THE GRANITE STATE**

In order to assess the current and future number of AFVs, a two pronged approach was taken. First a questionnaire was mailed out to all the identified stakeholders and EPA affected fleet managers in the state. This requested information that would allow

compilation of data on current and future AFVs. This questionnaire is shown in section 6. Second, the State Division of Motor Vehicles (DMV) was requested to provide registration information on AFVs throughout the state. This request was turned down due to confidentiality issues and was therefore not available to identify new stakeholders and/or EPAct affected fleets not previously compiled. As a result the compilation of AFVs in the state was labor intensive with phone and Email as the primarily channel for information transfer in addition to the questionnaire. The lists below are a current accurate count of primary stakeholders who have AFVs in their vehicle fleet.

Although GSCCC would like to see higher numbers of AFVs in both current and projected use, we are encouraged by the fact that current and projected vehicles in the heavy duty (HD) and medium duty (MD) categories are a significant percentage of the total, i.e. 30% HD, 20% MD current and 22% HD, 19% MD future. These types of vehicles will offset a much greater amount of fossil fuel per mile traveled than light duty vehicles. Therefore, the impact for lowering our use of imported oil is much greater than if all the vehicles were light duty sedans and/or pick up trucks. We have obtained average fuel consumption numbers from KeySpan for HD CNG vehicles, Palmer Propane Gas for HD LPG vehicles, and Schwans for MD LPG vehicles. We have also obtained the differential BTU content ratios between diesel, CNG and LPG, fuels. Based on this information, current and projected diesel fuel displacement in New Hampshire in gallons per year for HD and MD vehicles has been calculated.

- Currently these AFVs are displacing 350,000 gallons of diesel per year of operation.
- Projections for the next five years indicate this displacement will increase to 1,400,000 gallons of diesel per year of operation.

## CURRENT AND FUTURE VEHICLES

### A. REGIONAL VEHICLES

### B. REGIONAL VEHICLES

2001

BY 2006

GSCC STAKEHOLDER	CNG	BIOD	LPG	E-85	EV	CNG	BIOD	LPG	E-85	EV
COAST Transit			4 MD					5 MD		
Eastern Propane Gas Inc.*			31 HD 45 LD					36 HD 50 LD		
KeySpan Energy*	10 LD		16 HD 2 MD 3 LD			1 HD 6 MD 18 LD		18 HD 3 MD 3 LD		
Hampton Shuttle						3 LD				
NH Administrative Services					1 LD					1 LD
NH Fish and Game					1 LD					5 LD
NH Hospital					1 LD					1 LD
NH Air National Guard (bi-fuel)	3 LD					10 HD 10 MD 10 LD				
NH Technical Institute	1 LD				2 LD	2 LD				4 LD
NH Veterans Home					1 LD					1 LD
Northern Utilities*						15 LD				
Palmer Gas Co.*			15 HD 4 LD					18 HD 6 LD		
Pease Development Authority*					1 LD	5 HD 3MD 2 LD				4 LD
Portsmouth, City of						7 LD				3 LD
Public Service of NH			1 LD					2 LD		5 LD
Regal Limousine						20 LD				
Schwans Sales Enterprises, Inc.			34 MD					44 MD		
State of NH DES*	7 LD				2 LD	20 LD				3 LD
State of NH DOC* (bi-fuel)	1 LD									
State of NH DOT*	5 LD			12 LD	2 LD	9 LD	3 HD		32 LD	2 LD
State of NH ECS*			1 LD		1 LD			2 LD		2 LD
Suburban Propane*			3 HD 2 MD 1 LD					4 HD 3 MD 2 LD		
Timeless Technologies					1 LD					2 LD
Town of Durham				1 LD		7 HD 3 MD 10 LD			1 LD	
Unitil Service Corp.					1 LD					1 LD
University of NH*			1 LD		2 LD	10 HD 10 MD 10 LD				15 LD
<b>TOTALS</b>	<b>27</b>	<b>0</b>	<b>163</b>	<b>13</b>	<b>16</b>	<b>191</b>	<b>3</b>	<b>196</b>	<b>33</b>	<b>49</b>

\* = Fleets covered by EPAct

LD= Light Duty (<15,000 lbs. GVW)

MD = Medium Duty (15,000 to 26,000 lbs. GVW)

HD = Heavy Duty (>26,000 lbs. GVW)



### **III. MARKET DEVELOPMENT PLAN**

At the federal level, much has been done to assist in creating an effective market development plan that can be applied to specific regions of the country. Our approach is to utilize many of the recommendations made by DOE in their Clean Cities handbook regarding niche markets and activity centers to focus on. This approach will give us the greatest potential for increasing the number of AFVs in our state because it will target existing large fleets, embrace those fleets that have already begun to acquire AFVs and begin the development in the most populated areas first.

The challenge facing New Hampshire and other states within our region is the lack of a market driven rationale for acquiring AFVs. Thus our plan needs to address not only the best niche markets and population centers to pursue, but also to create the climate necessary for decision-makers to agree on long term AFV procurement plans. Whether this includes incentives, grants, advanced vehicle technology development or simply operational cost savings analysis, the reason for switching from diesel or gasoline to a clean alternative fuel must be clear and economically alluring. It is all too evident that unless the economics of utilizing an alternative fuel is better than using gasoline or diesel, the rate of investment and commitment will be very slow. Dedicated engines and fuel delivery systems that run on alternative fuels must be made available at comparable prices for conventional fuel vehicles. Tax breaks for AFVs that do not get the same miles per gallon as gasoline or diesel must be instituted to level the playing field. These issues and others must be dealt with on a continuous basis to help develop the market.

Below are the specific population areas in the Granite State being targeted in our Market Development Plan, niche markets that have been identified, and partnerships that are being forged to create real AFV projects.

#### **A. SEACOAST (PORTSMOUTH, DURHAM, DOVER, ROCHESTER)**

The Seacoast region is in close proximity to Maine and Massachusetts, and this could lead to a regional multi-state Clean Cities effort through clean corridor creation along the interstate highways. For example, there are 50,000 commuters who travel between the Seacoast region of NH and greater Boston area each day. This region is also designated as serious ozone non-attainment by the EPA. Both of these facts will be used to help promote the market for AFVs here and in surrounding cities and towns. Niche markets in this seacoast region include Public Transit, Airport Fleets, Local Governments, University Campus and Delivery Services. COAST is a public transit company that services Portsmouth-Dover-Rochester. It currently has four dedicated propane powered replica trolleys in its fleet with supporting infrastructure. COAST is under discussion with the U.S DOT and local partners to obtain funding to increase their fleet to include

hybrid electric propane powered paratransit buses between Portsmouth and Exeter, where new commuter rail service from Boston MA will begin in the fall of 2001. This rail service will increase both public and private transit to the train stations and afford the opportunity to utilize clean transportation fuels where possible. Our market development plan will exploit this opportunity between Portsmouth, Exeter, Durham and Dover, where the bulk of the commuters will originate.

The University of New Hampshire currently has two electric vehicles on campus. The EVs have worked well thus far and there is a possibility of expansion of the number of electric vehicles in the fleet. Also, with a recent CMAQ grant, UNH plans to purchase several AFV vehicles in the Summer-Fall of 2001, with additional procurements in the spring of 2002 and thereafter at least 6 more AFVs per year. The fuel type for these purchases is uncertain at this time, but it appears it will either be dedicated electric, or an electric drive with an alternative fueled auxiliary power unit (APU) to maintain charge on the battery pack or dedicated CNG vehicles. Efforts to choose the best vehicle and infrastructure for this niche market are ongoing. In addition, the funding request by Senator Smith for clean bus technology in New Hampshire, will be applied to UNH vehicles and infrastructure in 2002.

The Pease Development Authority and the NH Air National Guard at the Pease Tradeport are also committed to AFVs. This location will remain one of the critical military aircraft centers and will also operate as a commercial airport to help alleviate congestion at Boston Logan Airport approximately 50 miles to the south. Commuters from north of Boston and west of Portsmouth are expected to begin using this service in greater numbers as the number of airlines increases. As this occurs the need for additional bus service will be necessary and GSCCC stakeholders would like to pursue CNG transit service to expand this type of infrastructure in this region. Transit buses will be the focus for this operation in our market development plan. Stakeholders involved with infrastructure development are prepared to install a CNG refueling station, when demand is adequate, to service these buses. Regal Limousine, also from Portsmouth, has pledged to convert at least 1/2 of its fleet to CNG as soon as a station is available. This represents approximately 20 additional vehicles. Hampton Shuttle has also proposed utilizing CNG vehicles in their airport shuttle service from the Seacoast to both Manchester and Logan airports, as well as establishing a CNG-based transit service connecting Portsmouth, Concord, and Manchester.

## **B. MERRIMACK VALLEY (NASHUA, MANCHESTER, CONCORD)**

Merrimack Valley is one of the fastest growing urban areas in New England. During stakeholder meetings several niche markets were identified, including downtown shuttle bus and paratransit services, taxicabs, and city government vehicles. In order to justify investment in AFV infrastructure there is a need to coordinate transportation planning in the region.

The City of Nashua has explored use of AFVs in the past for their transit fleet, but were unable, at the time, to justify the additional expense of a CNG transit fleet. They have also expressed interest in hybrid electric technology. Since this option was last explored by Nashua, technology improvements have removed some barriers to incorporation of AFV transit vehicles in the fleet, and rising conventional fuel costs have changed the economic equations. It is expected that once NH is designated a Clean City, coalition requests for funding assistance will be initiated by the city of Nashua. A coordinated effort between Nashua, Manchester and surrounding areas would help develop investment in this AFV technology today.

Manchester has a great potential for AFVs traveling from downtown to the airport and a future rail connection to Boston. Because of the congestion at Boston Logan Airport, traffic at the Manchester Airport is steadily increasing as it is used as an alternative location for regional air traffic. Airports represent a unique niche market because they include transit and shuttle bus service, livery service, airport vehicles, and taxicabs for on-road vehicles. Fueling infrastructure can additionally be supported through the use of alternative fueled ground service equipment (GSE).

Also in the Manchester area is AES, a major electric power producer, that is building a 780 MW combined cycle power plant just adjacent to the airport. AES has expressed interest in developing a shuttle service for senior citizens between the airport and downtown Manchester utilizing either all electric or hybrid electric vehicles. The timetable for this effort is 2002 to 2003, when the new power plant is on-line and fully functional. Also, a local research and development company, Creare, is in the process of partnering with AES to test a new concept fast charger for electric vehicles. The timing for both of these efforts is ideal for demonstrating a fast charge airport based shuttle bus. Since one of the difficulties with electric vehicles has always been the speed with which they can be refueled, this demonstration could make a major improvement in this technology and its viable application and rationale for investment by stakeholders.

Three major stakeholders in Concord, the City of Concord, Concord Area Transit (CAT), and the Concord School District (CSD) have expressed interest in incorporating alternative fuel vehicles in their fleets. Potential AFV use includes transit vehicles and school buses. The New Hampshire chapter of the Sierra Club has been a very active player setting up meetings with Concord area stakeholders. The Sierra Club and other GSCCC stakeholders will continue to assist Concord area stakeholders in determining capital and life cycle costs of AFVs as compared to conventional fueled vehicles. Operating costs are a primary concern, particularly for transit operations. As is true with just about all the potential players in the AFV field, stakeholders must be able to justify the use of AFVs economically, not just socially.

The Concord area is also the New Hampshire base for Schwan's Food Service, a national frozen food home delivery company. Schwan's has had great success in converting the majority of their frozen food delivery vehicles to propane and they plan to do additional conversions in the future. The level of their commitment is such that they have purchased a vehicle conversion company, Impco, to reduce the cost of future conversions and maintenance. Schwan's fleet operates throughout all portions of New Hampshire.

### **C. NORTH COUNTRY**

New Hampshire's North Country provides a great opportunity to penetrate niche markets. This section of the state is home to 11 ski resorts that have endorsed the Sustainable Slopes program with over 20 others that operate in the state and could be possible partners in Clean Cities. Ski areas recognize that global climate change could negatively impact their businesses and have set up an environmental charter to demonstrate their commitment to good environmental stewardship. These resorts represent a market for alternative fuel use in shuttle busses, machinery, small fleets, and portable generators. GSCCC has started to reach out to the ski industry and the preliminary response has been receptive.

### **D. MONADNOCK**

The Monadnock Region is home to the city of Keene, located in the Southwest corner of the state, which has been very proactive regarding the use of Alternative Fuels. The city is home to an active organization under the International Council for Local Environmental Initiatives (ICLEI) concerned with global climate change issues and wishes to reduce its emissions of "greenhouse gasses". Keene's ICLEI group contacted GSCCC to provide a speaker for a transportation workshop held for the ICLEI group to hear about emissions reductions from alternative fuels. The city's initial interest was in CNG as a fuel for its fleet, but Keene's distance from an established pipeline creates problems. Keyspan's existing pipeline is some 50 miles from Keene, making it too costly to extend the pipeline at this time and too far away to provide a dependable refueling station. However, the city is willing to be part of a pilot program for biodiesel. Currently, Keene uses 58,000 gallons of diesel every year for its 120 vehicles. The city has stated that it is willing to convert all of its current diesel fleet and its diesel generators to biodiesel and would dedicate its current storage tanks to this project. The project would also lend itself to emissions testing of biodiesel through the use of the state's facilities. Details of the pilot project will be developed in late 2001.

### **E. DARTMOUTH**

The Dartmouth Region, while lacking in large urban areas, is home to Dartmouth College and a large Medical Center that is undergoing expansion. In speaking with representatives from the Hitchcock Medical Center, it is apparent that GSCCC's vision fits nicely with those of the hospital. A reduction in mobile source emissions through implementation of an Alternative Fuels program could

result in fewer hospital visits and improved public health. As a steward of public health, the medical center understands that it plays as critical a role in preventing illness as it has in curing illness. Discussions have just begun with Hitchcock, but a need for limited transportation currently exists for its security and service personnel that could make Hitchcock a viable partner.

Dartmouth College also represents an opportunity to incorporate the use of AFVs in a niche market. Because of the environmentally conscious student body and the existence of a private fleet, Dartmouth could follow the path of the University of New Hampshire and also become involved with GSCCC.

#### **IV. GOALS / OBJECTIVES / TIMELINES**

According to a survey conducted by industry publication *AltFuels Advisor* in early January 2001, industry and government leaders have identified some major trends that will contribute to the AFVs industry's growth for 2001 and beyond. These trends are based on petroleum displacement strategies, the Environmental Protection Agency's proposed rules for low-sulfur diesel fuel, and methyl tertiary butyl ether (MtBE) phase-outs. The long-range outlook for the nation proposes that fuel cells and, ultimately, a hydrogen fuel economy is on the horizon. Experts make the interesting point that rather than phasing out current alternative fuels, the opposite is true. Nearly every alternative fuel will have a place in the new hydrogen economy.

This encouraging report will help provide an impetus for achieving our GSCCC goals because many alternative fuels have a hydrogen rich base and can be the raw material for a host of propulsion systems. It is important to note, however, that not all alternative fuels are appropriate for specific regions of the country, and based on the quantification of the alternative fuels market in New Hampshire as outlined in section II above, it is quite clear that our fuels of choice, or those that are market driven are: Propane, CNG, LNG and Electric. Again, all these are either hydrogen rich or derived from renewable sources and can be embraced for future expansion. During 2000 and 2001, the GSCCC met regularly to formulate specific program objectives for cleaner air and a reduced dependence on foreign oil. Below are descriptions of the goals and objectives discussed during these meetings.

The **GOALS and OBJECTIVES** of our program are the following:

##### **A. DEPLOY MORE AFVS IN THE GRANITE STATE**

1. Work with the New Hampshire State Agencies to place additional AFVs in the state fleet. This will be accomplished by:
  - Making demonstration vehicles available for real application tests;
  - Adding AFVs to the State Purchasing bid list;

- Utilizing existing CMAQ funds to offset the incremental costs of AFVs;
- Helping stakeholders target future CMAQ funds to offset added costs associated with some AFVs, and:
- Expanding refueling infrastructure.

Responsibility: Working Group 1 and the State of New Hampshire Alternative Fuel Vehicle Project (AFVP)

Timeline and Status: Demonstration AFVs have been made available at numerous outreach events throughout 2001, and will continue to be made available during appropriate events or by request. AFVs were added to the State Purchasing bid list in FY 2002 (July 1, 2001). Existing CMAQ funds have been used by State agencies to purchase 14 CNG light duty vehicles and install one fast fill and three slow fill stations in the state. Two more AFV CMAQ proposals were submitted to NH DOT in September 2001. One of these applications will help to expand the refueling infrastructure by adding a fast fill station in the Seacoast area. The GSCCC will continue to work with stakeholders in future rounds of CMAQ funding.

2. Work with fuel suppliers and utilities throughout the Granite State to start or continue to deploy vehicles in their fleets running on EPCa qualified fuels, where applicable. This will be accomplished by:
  - Identifying all fuel suppliers and utilities in the State using databases maintained by the New Hampshire Department of Resources and Economic Development and the Governor's Office of Energy and Community Services, and encouraging them to become GSCCC stakeholders;
  - Providing current information on AFV technology to these stakeholders;
  - Seeking partnerships with public private groups for common fuel use, and;
  - Obtaining demonstration vehicles for user testing.

Responsibility: Working Group 1

Timeline and Status: In 2000 and 2001 several fuel suppliers were contacted by GSCCC executive committee members, many of which now participate as GSCCC stakeholders. Throughout the remainder of 2001 and through 2002, GSCCC executive committee members and Working Group 1 members will continue to contact the remaining fuel suppliers regarding participation in the coalition, and new or expanded use of AFVs. Through the stakeholder meeting process GSCCC will continue to build partnerships for common fuel use.

3. Assist the University of New Hampshire (UNH) in Durham in complying with EPCa requirements. This will be accomplished by:

- Researching and documenting available alternative fuels and vehicles, and advantages and disadvantages associated with each option, and;
- Determining which available options could be used to satisfy the transportation needs of UNH and other campuses, particularly as related to UNH's existing CMAQ grant for transit vehicles.

Responsibility: Working Group 1

Timeline and Status: UNH has been an active member in the GSCCC since efforts began in 2000, and has already received much information already concerning available fuels and vehicles. In 2001, GSCCC worked with UNH to request funding under the Clean Fuels Formula Grant program to expand on a previous CMAQ award for conventional fuel transit vehicles, to make those vehicles compressed natural gas. In November 2001 the US House passed a Transportation appropriations bill which contains \$1 million for AFV projects at UNH. The bill has yet to pass the senate and be signed by the President, however no further changes in the level of funding are expected.

Working Group 1 members will help UNH identify AFVs which best suit their transit needs, and will continue to work with UNH to identify other sectors of the campus fleet which can incorporate AFVs.

4. Work with New Hampshire's transit operators to encourage expansion and/or introduction of AFV technology into transit fleets as appropriate. This will be accomplished by:

- Continuing and improving on GSCCC's existing working relationships with the primary transit stakeholders such as Cooperative Alliance for Seacoast Transportation (COAST), Wildcat Transit, Concord Area Transit (CAT), Manchester Transit Authority and Nashua City Bus, and;
- Assisting in conducting cost analysis of AFV options, and helping to locate funding sources to offset any incremental costs of vehicles or fuels.

Responsibility: Working Group 1 & 2

Timeline and Status: GSCCC has held several meetings with the state transit providers, particularly CAT, COAST, and Wildcat. In addition to pursuing a CNG transit vehicle project for the UNH Wildcat Transit through COAST, GSCCC is also discussing a biodiesel pilot project for an existing transit fleet, and a propane microturbine bus project. GSCCC Working Groups will continue to provide expertise and assistance to the State's transit providers to encourage expanded use of alternative fuels and AFVs. In calendar year 2002 GSCCC will expand outreach efforts to transit fleets located in the ozone attainment areas in the southwestern and northern parts of the state.

5. Educate school districts and other stakeholders about AFV availability and performance, and encourage use of AFVs and alternative fuels as appropriate in school bus fleets. This will be accomplished by:

- Meeting with representatives from school districts and providing them information to answer questions and concerns the school districts may have regarding alternative fuels, particularly safety issues;
- Identifying available fuels for existing vehicles (such as biodiesel) or available vehicles for use with other alternative fuels, and;
- Assisting with preparation of grant applications to fund AFV projects for school districts.

Responsibility: Working Group 2

Timeline and Status: NH DES has begun outreach efforts to school districts regarding diesel idling issues. In summer 2002 GSCCC will take advantage of the contacts made in this current outreach effort to provide school districts information regarding alternative fuels. Throughout 2002 and 2003 efforts will be made by the Working Group to identify funding sources for AFV and alternative fuel projects at school districts.

6. Work with the Pease Development Authority (PDA) and the NH Air National Guard (NH ANG) at the Pease Tradeport to expand their use of AFVs. This will be accomplished by:
  - Encouraging and assisting PDA and NH ANG in planning for incorporation of AFVs into future Tradeport expansion including airport projects, and;
  - Obtaining demonstration vehicles for the Pease tenants, including the airport and the NH ANG when possible, and providing contacts at other airports such as Boston Logan Airport where AFV deployment is underway.

Responsibility: Working Group 1

Timeline and Status: In the spring of 2001 a CNG FuelMaker was installed at the NH ANG base to refuel their existing three light duty CNG vehicles. PDA and NH ANG have identified a location at the Tradeport for a fast-fill CNG refueling station when demand for the fuel increases enough to support a fast-fill station. PDA and the NH ANG have attended demonstrations of AFVs targeted at the airport industry at the Connecticut Bradley Airport. The airport at Pease is expected to grow significantly over the next few years. GSCCC will continue to work with PDA and NH ANG officials as this expansion occurs to lend assistance as necessary in procuring AFVs for this niche market. Both entities have been active, enthusiastic stakeholders in the GSCCC to date. GSCCC will continue to look for ways to incorporate additional AFVs at this location.

7. Work with delivery companies throughout the Granite State to develop a plan to introduce appropriate AFV technology into their local and regional delivery fleets. This will be accomplished by:
  - Providing information regarding existing available equipment;

- Providing project and contact information regarding existing, successful AFV projects, such as the introduction of all electric USPS vehicles in NY, and a hybrid electric version in Boston;
- Monitoring new efforts to develop clean long range vehicles for delivery fleets, such as those currently being explored by FedEx, and determining if such developments can be transferred to other delivery companies such as UPS, DHL and USPS in New Hampshire, and;
- Highlighting the success of existing AFV usage in New Hampshire fleets, particularly Schwans' money saving use of propane in a large percentage of their fleet.

Responsibility: Working Group 1 & 2

Timeline and Status: GSCCC intends to begin outreach to fleet operators in summer 2002.

8. Work with Regal Limousine, Hampton Shuttle, and other airport shuttle services to encourage incorporation of AFVs into their fleets. This will be accomplished by:
  - Promoting the installation of fast fill CNG refueling stations in the Seacoast so these shuttle services will have a refueling infrastructure, and;
  - Seeking new stakeholders in the Manchester area to build the demand for CNG to the level necessary to support a publicly accessible CNG refueling facility in the Manchester area.

Responsibility: Working Group 1

Timeline and Status: Hampton Shuttle has indicated that, while a Portsmouth/Pease location is preferable for a refueling facility, they will utilize a CNG refueling station located in Durham. Once the timeframe for the UNH/Durham project is established, GSCCC will notify stakeholders within a reasonable refueling area to solicit additional usage of the station and to assist in planning for these entities. The status of the UNH facility should be known by the end of 2001. GSCCC will continue to build demand for a Pease/Portsmouth based refueling facility in the coming years.

9. Work with Manchester Airport (MHT) personnel and airport tenants to foster support for the introduction of AFVs on both the air and non-air side of the facility. This will be accomplished by:
  - Providing information on existing technology and successful case studies;
  - Making the airport tenants aware of the GSCCC's efforts to expand AFV fueling infrastructure in the Manchester area;

- Encouraging the airport and tenants to become GSCCC stakeholders, and;
- Tracking, as able, airport expansion plans and continually encouraging incorporation or AFVs in any airport expansion plans.

Responsibility: Working Group 2

Timeline and Status: In December 2000 and January 2001, GSCCC and Sheila Lynch with Northeast Advanced Vehicle Consortium (NAVC) approached MHT regarding EPA grant money for clean airport projects related to ground service equipment (GSE) (10 airports, \$2 mill each). MHT agreed to fund a study to determine if an application was feasible. NAVC conducted the study in spring 2001 by contacting airport tenants and surveying the amount of current, and projected future, GSE. Due to lack of interest by airport tenants in participating in such a project it was determined a good grant application could not be pulled together and the project died. As expansion at MHT continues, GSCCC will continue to work with MHT officials encouraging use of public transportation and AFVs in particular, in the roadside airport operations. These discussions will probably be tied in with outreach efforts to the City of Manchester in summer 2002.

10. Work with Municipalities to ensure AFVs are considered during the planning process in vehicle procurement. This will be accomplished by:

- Contacting appropriate personnel in the State's larger municipalities to inform them of GSCCC and invite them to become GSCCC stakeholders;
- Providing a networking forum to assist in the creation of partnerships between cities and towns to build adequate demand to attract infrastructure providers;
- Assisting municipalities in applying for competitive grants (CMAQ and Clean Cities) to help offset any infrastructure and maintenance facility costs, and;
- Providing demonstration vehicles for city and town personnel to use.

Responsibility: Working Groups 1 & 2

Timeline and Status: GSCCC has been working closely with several municipalities already, including Portsmouth, Nashua, and Concord. With designation as a Clean Cities Coalition, and appointment of a full-time GSCCC Coordinator, GSCCC will expand our outreach efforts to include additional communities. Initial outreach efforts should begin in spring 2002, and continue throughout 2002 and 2003.

11. Work with New Hampshire ski areas to identify and procure AFVs appropriate for their needs. This will be accomplished by:

- Identifying New Hampshire ski areas which participate in the Sustainable Slopes initiative;
- Contacting New Hampshire ski areas to inform them of GSCCC efforts;
- Scheduling an Advancing the Choice event for the ski industry niche market, and;
- Arranging for demonstration vehicles for the ski areas to use.

Responsibility: Coalition Coordinators and Working Group 1

Timeline and Status: In late fall 2001 GSCCC identified New Hampshire ski areas that participate in Sustainable Slopes. GSCCC has contacted some ski areas to date, and will continue to introduce ourselves to New Hampshire ski areas over the 2001/2002 ski season. In early 2002, Maine, New Hampshire, and Vermont will work together to schedule a joint Advancing the Choice event at a New Hampshire ski area. The timing of the event (spring or fall) will be determined by the schedule of the ski areas. Demonstration vehicles will be provided to ski areas on an 'as requested/as available' basis beginning with the 2002/2003 ski season.

12. Outreach to communities in the northern part of New Hampshire to identify niche markets that can utilize alternative fuel technology. This will be accomplished by:

- Identifying campus-style organizations such as universities, colleges, and medical centers which may lend themselves to AFV use;
- Utilizing information available from DES and ECS to identify a contact person at these campus-style entities who works with either environmental or energy related issues, and;
- Contacting individuals identified.

Responsibility: Coalition Coordinators and Working Group 1

Timeline and Status: In late fall 2001 GSCCC identified expansion activities at the Dartmouth Hitchcock Medical Center as a potential AFV target. GSCCC coordinators have begun the process of identifying a contact individual for this project, and will continue these efforts through early 2002. Over the course of 2002 and 2003 GSCCC will continue to outreach to additional potential stakeholders in the northern part of the State.

## **B. DEPLOY MORE REFUELING STATIONS IN THE GRANITE STATE**

1. Develop a strategic plan to expand alternative fuel refueling infrastructure throughout the Granite State. This will be accomplished by:

- Surveying GSCCC stakeholders to determine expected fleet expansions, then using this information to determine the site specific refueling infrastructure, by size and fuel type, necessary to facilitate this expansion;
- Working closely with the fuel suppliers and infrastructure installers to determine the best way to keep costs down, and;
- Continually identifying funding sources, and helping prepare applications for such funding, which can be used to assist in infrastructure development.

Responsibility: Working Group 1 and 2

Timeline and Status: Starting in fall 2000, GSCCC has conducted stakeholder surveys to determine expectations and needs of GSCCC stakeholders. While this is an ongoing process, core centers of interest have been identified. GSCCC will move forward with discussions with various fuel providers, and will continually seek out and assist stakeholders in obtaining, additional funding for AFVs and infrastructure.

2. Work with the Concord area stakeholders, particularly the City of Concord, Concord School District (CSD), and Concord Area Transit (CAT), to determine feasibility of incorporating CNG vehicles into these fleets, and to site and size a CNG refueling station to be utilized by Concord. This will be accomplished by:

- Providing real world cost information from other municipalities that have invested in AFV vehicles and infrastructure, and;
- Providing air quality information resulting from the replacement of diesel to AFV technology to help support CMAQ grant applications.

Responsibility: Working Group 1

Timeline and Status: In Summer 2001, GSCCC held several meetings and conversations with representatives from the City of Concord regarding incorporation of CNG vehicles into Concord fleets. While the City has determined that CNG vehicles do not make economic sense for the City at this time, GSCCC will continue to provide updated information to appropriate personnel. In addition, GSCCC is pursuing biodiesel projects in the Concord area as an interim measure.

3. Formulate a plan to deploy and test a fast charger under development by Creare Inc., at the new AES Granite Ridge power plant near Manchester Airport. This will be accomplished by:

- Working with AES to procure and deploy an electric shuttle bus servicing the Manchester area, including testing and evaluation of the equipment prior to public deployment.

Responsibility: Working Group 1

Timeline and Status: Initial discussions with AES and Creare occurred in spring 2001. Follow up work on this project will occur in summer 2002.

4. Work with local utilities and CNG refueling station providers to identify and contact potential users of CNG refueling infrastructure with the goal of developing sufficient demand to support publicly accessible fast fill CNG refueling station in Portsmouth, Manchester and Nashua. This will be accomplished by:
  - Determining the minimum fuel usage necessary to attract utilities and station installers to construct a public fueling station;
  - Surveying current stakeholders to identify other potential stakeholders and users, and;
  - Obtaining commitments from limousine, transit and shuttle services to purchase CNG vehicles and utilize refueling facilities.

Responsibility: Working Group 1 & 2

Timeline and Status: GSCCC has been conversing with fuel station installers and gas companies since late 1999 to determine minimum fuel usage necessary to support a refueling facility. GSCCC has used, and will continue to use, GSCCC stakeholder meetings, alternative energy events, and other outreach events associated with energy efficiency or clean air to continue to build an AFV refueling network.

5. Help UNH site a public CNG refueling station to be used by town of Durham, the University, other State vehicles, and the general public. This will be accomplished by:
  - Applying for funding to help pay for a CNG refueling facility and the incremental cost of CNG transit vehicles for the University;
  - Providing contact information regarding equipment options, costs and regulatory requirements, and;
  - Providing real world operational information from other universities that have invested in AFV vehicles and infrastructure.

Responsibility: Working Group 1 & 2

Timeline and Status: In April 2001 GSCCC submitted a Clean Fuels Formula Grant request through Senator Bob Smith's office, seeking funding for a CNG refueling facility, an upgrade to the maintenance facility to allow for work on CNG vehicles, and for the incremental cost difference of CNG transit vehicles versus conventional diesel transit vehicles. In late November 2001 funding for the UNH project was passed in the House transportation appropriations bill at \$1

million. This bill has yet to go pass the senate and be signed by the President, but no changes are expected in the approved level of funding at this time. Through stakeholder meetings UNH staff have been introduced to appropriate alternative fuel contacts which will enable them to solicit any needed information. GSCCC will continue to seek operational information from other universities or comparable business campuses that could aid UNH.

### **C. INCREASE STAKEHOLDER FLEET RECRUITMENT**

1. Private fleet recruitment will be the primary focus within this goal, and a special emphasis on e-commerce heavy-duty delivery vehicles and buses will be made. This is due to rapid growth in this sector of transportation and the potential for making a significant impact on clean air and offsetting our dependence on foreign oil imports. This goal will be accomplished by:
  - Identifying existing fleets which operate in the State through Internet searches, assistance from New Hampshire's Department of Resource and Economic Development, and information from current stakeholders. Once new fleets have been identified, the fleet managers will be invited to attend GSCCC stakeholder meetings;
  - Highlighting successful AFV fleet projects such as the all electric and hybrid electric versions of the CitiVan delivery vehicle, UPS programs, US Postal Service programs, and other applicable AFV developments via a newsletter, and;
  - Arranging for demonstrations of alternative fuel delivery vehicles and buses by companies who have successfully applied this technology in order to build confidence in the reliability of the technology.

Responsibility: Working Group 1

Timeline and Status: During Summer 2001 the GSCCC executive committee identified several existing fleets in New Hampshire. Some fleets, such as Suburban Propane, have already been invited to be a part of the GSCCC. Other fleets will be included in outreach efforts that will be ongoing throughout calendar year 2002.

2. Arrange for informational meeting for school transportation officials, municipal fleet managers, state fleet managers, and transit providers about the Clean Cities program to increase the number of regional stakeholders and develop a pilot project for the use of AFV buses. This will be accomplished by:
  - Setting up quarterly meetings in Concord, Portsmouth, Nashua and Manchester at the area high schools to discuss pilot project development;
  - Educating school boards and school bus transportation companies about the environmental and health impacts of diesel exhaust;

- Showcasing successful AFV projects, and;
- Making demonstration vehicles available to be available for test-drives and performance viewing.

Responsibility: Working Group 2

Timeline and Status: In Mid 2001 the New Hampshire Department of Environmental Services began outreach efforts to school districts regarding diesel idling and diesel opacity issues. GSCCC will utilize the connections established by these programs to expand this outreach to school systems to include discussions of AFVs, and to establish one or more pilot AFV projects in calendar years 2002 and 2003.

3. Work with vehicle manufacturers and local fleet managers to identify regional private fleet managers to recruit for stakeholder membership and to develop possible pilot projects. This will be accomplished by:

- Disseminating Clean Cities information packets to targeted niche markets highlighting funding opportunities, environmental benefits, and public relations benefits of using alternative fuels.

Responsibility: Working Group 1 & 2

Timeline and Status: Throughout 2001 GSCCC has been identifying entities which operate vehicle fleets that lend themselves to alternative fuel applications. GSCCC will build on these initial contacts to disseminate information about GSCCC to fleet managers at a regional level, encompassing all of New England. Many of these fleets may already be involved with neighboring Clean Cities coalitions. GSCCC will enlist the aid of other regional coalitions to inform regional fleet managers of efforts to establish AFV fleets and infrastructure in New Hampshire. These efforts will continue indefinitely.

4. Identify niche market fleets that could utilize the electric and hybrid electric delivery vehicles now developed and being used by USPS. This will be accomplished by:

- Using the area chambers of commerce, the New Hampshire Department of Resource and Economic Development, and municipalities as sources for this delivery fleet information, and;
- Assisting these stakeholders in applying for funding from state and federal sources to help offset the costs of transitioning to alternative fuels.

Responsibility: Working Group 1 & 2

Timeline and Status: GSCCC is in the process of identifying niche market fleets in New Hampshire. Once identified, these fleet managers will be invited to participate in GSCCC stakeholder meetings that will take place throughout the remainder of 2001 and ongoing through 2002 and beyond.

5. Seek out additional regional fuel suppliers and utilities to encourage them to join the GSCCC stakeholders group. This will be accomplished by:
  - Identifying all fuel suppliers statewide with the assistance of the Governor's Office of Energy and Community Services;
  - Inviting the retail fuel suppliers to become more familiar with the Clean Cities Program by attending meetings both locally and nationally, and;
  - Demonstrating that an increase in the use of AFVs can lead to increased business opportunity for the suppliers.

Responsibility: Working Group 1

Timeline and Status: Several fuel suppliers, such as KeySpan Energy, Northern Utilities, and Suburban Propane are already stakeholders in GSCCC. During 2002 GSCCC will continue to identify the remaining fuel suppliers and provide them with information about GSCCC and AFVs.

#### **D. INCREASE PUBLIC AND MEDIA OUTREACH**

1. Create a GSCCC web page and provide linkage to appropriate home pages. This will be accomplished by:
  - Hiring a web master to maintain the site and post relevant information to highlight activities and project status for AFVs in the Granite State.

Responsibility: Working Group 2

Timeline and Status: In Spring 2002 the New Hampshire Department of Environmental Services will seek an intern capable of creating this website.

2. Work with the New Hampshire Department of Environmental Services (DES) and other stakeholders in developing air quality information specifically related to use of conventional versus alternative fuels. Target K-12 audiences for dissemination of this information. This will be accomplished by:
  - Pursuing funding opportunities for educational and outreach materials;
  - Obtaining commitment from DES to develop outreach materials and disseminate them at appropriate events such as state fairs, Earth day events and other public events;
  - Obtaining commitment from other GSCCC stakeholders to provide speakers and demonstration vehicles for school events when requested, and;
  - Informing school representatives of the availability of educational material, speakers and demonstration vehicles for class presentations.

Responsibility: Working Group 2

Timeline and Status: DES has been committed to alternative fuel and advanced technology vehicle outreach for several years, and has been showcasing their AFV fleet at all possible opportunities, including school presentations, environmental rallies, political events, and forums related to environmental issues. DES is currently updating existing alternative fuel and advanced technology vehicle fact sheets. The updated sheets will be finalized in early 2002. DES will continue to provide opportunities for the citizens of New Hampshire to obtain information regarding AFVs, and to take these vehicles for test drives in the coming years.

3. Host an annual Advancing the Choice event. This will be accomplished by:

- Planning an annual event which highlights successful AFV projects by GSCCC stakeholders;
- Securing demonstration vehicles from stakeholders to provide ride-and-drives at the annual event, and;
- Attempting to hold the annual event in conjunction with the American Tour de Sol, an annual road race held in the Northeast, that showcases all types of AFVs. GSCCC will request for a route that takes the vehicles through New Hampshire.

Responsibility: Working Group 1 & 2

Timeline and Status: spring 2002

4. Distribute "Fact Sheets" (safety, efficiency, emissions, availability, health, and cost) comparing conventional fuel vehicles to all the clean alternatives available in New Hampshire. These fact sheets can be distributed by all stakeholders during public events to educate the public on the positive effects of using AFVs. This will be accomplished by:

- Utilizing material already developed by various State agencies and private entities;
- Developing additional material for distribution where needed;
- Providing all stakeholders with copies of the Fact Sheets for distribution at events, and;
- Ensuring that all State agencies are aware of the existence of these materials for distribution at State government sponsored events.

Responsibility: Working Group 2

Timeline and Status: DES is in the process of updating existing fact sheets and plans to complete this work in early 2002.

5. Work with UNH and Wildcat Transit to develop an advertising campaign on campus regarding use of clean-fueled vehicles. This will be accomplished by:

- Placing information on the vehicles such as shrink-wrap external ads, and;
- Providing additional information or links on the UNH web site.

Responsibility: Working Group 2

Timeline and Status: This advertising campaign will begin upon deployment of CNG transit vehicles. These vehicles are to be funded by a Clean Fuels Formula Grant.

## **E. SECURE AFV LEGISLATION AND PROCUREMENT INCENTIVES**

1. The GSCCC Legislative Working Group will work with state legislators and local city officials to help draft and provide support for incentives which will increase the use of AFVs in privately owned fleets. This will be accomplished by:

- Determining what legislation exists, or is pending which provides appropriate incentive to expand the use of AFVs;
- Drafting letters of support for such legislation and providing stakeholders with sample support letters;
- In the absence of such legislation, working with other Clean Cities coalitions to draft legislation as needed which will support AFV incentives;
- Utilizing the input and resources of all GSCCC stakeholders to educate State and Federal elected officials about the environmental and national security benefits of AFVs, and the need for incentives to expand their use;
- Pursuing reductions in State registration fees for AFVs, and;
- Providing State legislators with and assessment of the potential for economic benefit to the State of New Hampshire via AFV purchase incentives.

Responsibility: Working Group 2

Timeline and Status: At stakeholder meetings in spring 2002 the GSCCC will develop a plan and timeline for pursuing this goal. Implementation of the plan will occur over 2002 and beyond.

2. The GSCCC will work with other Clean Cities groups such as in Massachusetts, Vermont, Maine, Connecticut, Rhode Island and New York to coordinate efforts in the Granite State to influence legislation and to promote clean corridors between contiguous states. This will be accomplished by:

- Setting up periodic meetings between the regional Clean Cities coordinators to share ideas and legislative efforts, strategy and methodology, and;
- Attending DOE sponsored Clean Cities events.

Responsibility: Working Group 2

Timeline and Status: GSCCC coordinators have maintained contact with neighboring Clean Cities coalitions, and will increase these contacts in early 2002 to develop regional plans.

## **F. SECURE FUNDS AND GRANTS**

1. Identify potential funding sources. This will be accomplished by:

- Conducting web searches for government, private, and foundation funding programs that are applicable to GSCCC projects, and;
- Utilizing The Foundation Directory Online which has a database of over 10,000 foundations listed, with a searchable database of more than 100,000 grants by the top 1,000 foundations.

Responsibility: Working Group 1

Timeline and Status: GSCCC will continually seek sources of funding for stakeholders and will assist stakeholders in applying for this funding. Assistance with funding has already been provided to some stakeholders, and this process will continue upon designation as a Clean Cities coalition.

2. Work with current and future stakeholders to identify projects that fit the criteria for the funding sources identified under Goal F1, such as DOE Clean Cities Grants, CMAQ grants, DOT grants and other developmental and deployment grant sources, and assist stakeholders in applying for these funds. This will be accomplished by:

- Attending pre-proposal meetings to gather information regarding the grant process and network with potential grantees that may not be familiar with the GSCCC;
- Obtaining cost share commitments from stakeholders to make potential proposals stronger;
- Identifying and supporting projects which may not be viable on their own, but have the potential to build on existing or planned alternative fuel infrastructure,
- Providing networking opportunities through regular GSCCC stakeholder meetings to help foster partnering between entities such as the Metropolitan

Planning Organizations (MPOs), NHDOT, and local government agencies and municipalities, including schools on AFV projects, and;

- Developing and sharing grant-writing skills by attending available training sessions such as those offered by DOE's Clean Cities program.

Responsibility: Working Group 1

Timeline and Status: In Fall 2001 GSCCC provided support to two stakeholder applications for CMAQ funds for CNG projects. The working group will continue to assist stakeholders as project proposals are developed, and as funding opportunities arise. Given the small size of many stakeholder fleets, GSCCC will be particularly diligent in providing a networking structure and encourage potential grant applicants to work together on joint, regional project applications.

3. Work with the Cooperative Alliance for Seacoast Transportation (COAST) to design, fabricate and deploy a hybrid electric propane powered shuttle bus. This will be accomplished by:

- Maintaining the existing Propane Education and Research Council (PERC grant and applying up to \$50,000 from it as a cost share to FTA monies).

Responsibility: Working Group 1 and Timeless Technologies

Timeline and Status: COAST board is currently considering approval of this proposal and will vote in late 2001. Should the project be approved it will move forward in spring 2002.

4. Contact major local and regional businesses for funding of special events and other outreach programs developed by GSCCC. This will be accomplished by:

- Utilizing stakeholders to identify companies which may be amenable to assisting GSCCC with events and outreach;
- Developing draft outreach materials to show potential donors;
- Recruiting stakeholders to lead efforts for individual events, and;
- Seeking opportunities to conduct outreach at events scheduled by other organizations that complement the goals of Clean Cities.

Responsibility: Working Group 1

Timeline and Status: GSCCC already takes advantage of scheduled events to highlight alternative fuel and advanced technology vehicles. For example, GSCCC provided demonstration vehicles at New Hampshire's annual Pollution Prevention Conference in April 2001, at a public hearing of the Senate Environment and Public Works Committee held at UNH in May 2001, and most recently at a Climate Change workshop in Keene, NH in October 2001. As GSCCC begins planning for a designation ceremony in spring 2002 the working

group will begin development of outreach materials and may seek additional funding for that event. Seeking funding for additional outreach will be an ongoing effort by GSCCC. Seeking funding for special events will occur on an as-needed basis.

5. File for 501(c)(3) status, making the GSCCC into a non profit organization (Granite State Clean Cities Incorporated), and then develop a plan for obtaining funding to sustain the organization and salary for the Granite State Clean Cities Coordinator. This will be accomplished by:

- Requesting the state government to set aside some funding for this organization to help sustain its operation;
- Applying for funding from DOE SEP to help pay the yearly salary of a Clean Cities Coordinator;
- Contacting local businesses that have funds set-aside for non-profit small business in the environmental and public outreach categories, and applying for grants from these organizations, and;
- Organize fund raising events and conferences.

Responsibility: Working Group 1 and 2

Timeline and Status: The Governor's Office of Energy and Community Services has provided funding for GSCCC efforts to date, and the coalition will continue to work closely with this agency to seek additional funding. GSCCC will apply for coordinator funding in the 2002 Clean Cities grant process. Additional action to obtain grants to help maintain GSCCC efforts will be an ongoing assignment for both working groups.

## **V. GRANITE STATE CLEAN CITIES ORGANIZATIONAL INFORMATION**

GSCCC is currently operated under the auspices of the New Hampshire Governor's Office of Energy and Community Services (ECS) and the New Hampshire Department of Environmental Services (DES), with a representative from each agency serving as co-coordinator of the coalition. Coalition decisions are guided by an Executive Committee whose members are listed below. Upon designation as a Clean Cities coalition GSCCC will continue to operate as an entity of these two agencies, although, at the option of the agencies, coordinator duties may be contracted out. During the first year as a designated coalition GSCCC will expand the membership of the executive committee to increase representation from the private sector. This expanded executive committee will evaluate benefits to be gained from incorporation as a 501(c)(3) non-profit organization. Should GSCCC seek status as a 501(c)(3) entity, GSCCC will establish a Board of Directors and implement the necessary articles and by-laws to satisfy non-profit status and permit fund raising activities. Incorporation would be under the name Granite State Clean

Cities, Incorporated (GSCCI). GSCCI would also join the National Clean Cities, Inc. as a chapter to obtain blanket non-profit status and additional funding opportunities.

In order to enable effective leadership, membership, recruitment, decision-making, funding and implementation of goals and objectives as outlined above, the current organizational structure of GSCCC empowers the two State agency co-coordinators, in consultation with each other, to manage and direct the affairs of GSCCC with input from DOE and other coalition stakeholders.

The Executive Committee will oversee all the activities of the Working Groups as described below to ensure continued progress and identification of barriers and formulation of solutions as encountered. The GSCCC co-coordinators will provide information annually in accordance with the national Clean Cities reporting program.

#### **A. COALITION COORDINATOR**

GSCCC currently has co-coordinators from the two State agencies, ECS and DES, who co-chair the Executive Committee and are tasked with ensuring the program plan is implemented according to the timelines and objectives. These individuals are:

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#### **B. EXECUTIVE COMMITTEE MEMBERS**

The Executive Committee is comprised of representatives/stakeholders from the public and private sectors. They will be the watch dog group overseeing the direction of the Working Groups within the organization. They will also provide assistance to the Working Groups, as needed, to help with contact information, technical support and programmatic direction so objectives are kept on track. The executive committee members are:

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## C. WORKING GROUPS

The GSCCC has split its stakeholders into two working groups. These groups will be charged with focusing their efforts on the goals and objectives of the plan in specific areas that are necessary for increasing AFV population in the key identified fleets. In addition, they will maintain their own commitment to being proactive in the expansion of alternatively fueled vehicles within the Granite State. As needed, subgroups will be formed to pursue specific projects.

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## **D. MONITORING AND REPORTING SYSTEM**

Progress in applying the Granite State Clean Cities Program Plan will be reported to the coalition stakeholders and the US Department of Energy biannually. Performance will be measured based on comparisons to the goals, objectives and timelines as described in section IV of the plan. Since many of the goals and objectives are

technology based and subject to significant change over time, the executive committee will review and revise, if necessary, any activities and project plans that will improve the effectiveness of achieving the goals and objectives of the plan. In order to track the progress and make adjustments to the plan as necessary, the following specific tasks will be established:

- Review and update biannually the Market Development Plan to maintain progress in achieving the goals and objectives of the program.
- Conduct a survey every six months to assess the Coalition's actual progress as compared to the planned progress.
- Provide the GSCCC status to DOE
- Hold stakeholder and working group meetings at least twice a year
- Hold Executive Committee meetings at least quarterly or more often if needed.

**E. DRAFT MEMORANDUM OF UNDERSTANDING:**

***GRANITE STATE CLEAN CITIES COALITION***

*Established to promote, procure and deploy alternatively fueled clean transportation vehicles in the state of New Hampshire by creating public and private partnerships to secure funding commitments in support of the alternative fuel vehicle (AFV) industry and supporting infrastructure.*

***MEMORANDUM OF UNDERSTANDING***

*By and Among  
"Signatory Organizations Listed"*

*and the*

***U.S. DEPARTMENT OF ENERGY***

***INTRODUCTION***

***Background***

The United States Department of Energy (DOE) is committed to energy use in the American transportation sector that is more efficient, less dependent on foreign sources, less environmentally disruptive, sustainable, and safe.

The Energy Policy Act of 1992, supplemented by the 1993 Executive Order 12344: Federal Use of Alternative Fuel Vehicles, and the Clean Air Act Amendments of 1990, all establish guidelines for effecting a favorable energy and environmental situation in the transportation sector. The DOE *Clean Cities* program is an umbrella to structure and achieve Energy Policy Act program goals and to coordinate objectives of governments and other Federal directives, such as the Clean Air Act.

***Purpose***

The purpose of the Memorandum of Understanding (MOU) is to set forth the agreements, respective responsibilities, and procedures necessary to carry out the objectives of the DOE Clean Cities program which accelerates the introduction and expands the use of alternative fuels and alternative fuel vehicles.

***Authority***

This MOU is authorized under the following laws and regulations: Energy Reorganization Act of 1974, which permits DOE to use the facilities of public agencies,

requires DPE to consult with the heads of other agencies on the use of their facilities , and allows DOE to enter into cooperative projects with other public and private agencies; the Energy Policy Act of 1992, Section 505, Voluntary Supply Commitments, which requires DOE to obtain voluntary commitments to help achieve replacement fuel goals from fuel suppliers, fleet owner, and vehicle suppliers. Under this MOU, these groups, united with other local stakeholders, signify their commitment to contribute to the goals of the program.

### **Policy**

Signatories under this MOU undertake their best efforts to achieve the specific goals and objectives set forth in the Program Plan.

### ***MANAGEMENT AND PROGRAM GUIDELINES***

*This MOU commits the undersigned to work together toward achievement of Clean Cities goals and the goals and objectives as stated in the Program Plan.*

### **Clean Cities Coordinator Responsibilities**

- Coordinate and document coalition activities
- Maintain database of stakeholders, community fleets, AFVs, and infrastructure
- Assist with overall implementation of Program Plan and development of new goals
- Coordinate meetings and reporting activities
- Participate as a member of the Executive Committee
- Delegate and monitor activities/responsibilities to other key stakeholders
- Act as a liaison between the Executive Committee, working groups and DOE
- Work directly with DOE Regional Support Offices to report coalition activities, progress, concerns, issue, etc.
- Provide assistance in public education activities
- Maintain and update, in concert with the coalition, the Program Plan
- Monitor and disseminate Federal/State/local legislative and incentive information to the coalition
- Assist with recruitment of stakeholders
- Represent GSCCC and GSCCI as needed at functions and events

### **DOE Responsibilities**

- Provide a Federal advisor
- Provide program implementation and MOU drafting guidelines
- Guide placement of Federal AFVs responding to Clean Cities recommendations and resource matching plans
- Direct the award of Federal funds and grants as available
- Provide information, general assistance and material for public relations and promotional activities
- Provide training for coordinators, fleet operators and other participants
- Provide a hotline/clearinghouse for technical and other information

- Conduct information exchange workshops
- Provide assistance in public education activities

**Stakeholder Responsibilities**

Signatories to this document agree to fulfill, to the best of their ability, their voluntary commitments to the Clean Cities Program as delineated in the associated Program Plan

**Guidelines**

The Clean Cities program will be administered according to the Program Plan. The signatories herein have agreed that the Program Plan is designed to achieve Clean Cities objectives and follow the guideline described here:

- Sets forth goals reflecting the planning process and defining what the organization seeks to accomplish and why;
- Creates and organizational structure enabling Clean Cities to effectively carry out its mission;
- Characterizes the AFV market situation by gathering primary information on fuels, vehicles, and infrastructure from participating Clean Cities stakeholders;
- Sets forth intermediate objectives, action steps, or commitments designed to be the "how to" (objectives) elements of the Program Plan;
- Delineates estimated timetables containing discrete action items, milestones and deadlines for achieving objectives and goals, and;
- Establishes a monitoring system for program management, advertisement of program success, and method for conveying program performance to DOE.

**Supplementary Interagency or Other Agreements**

Because the DOE Clean Cities program supports Congressional and Executive directives and many involve other Federal, State and local governmental entities, Clean Cities program commitments may be subject to modifications upon intervening Congressional or Executive guidance.

**ADMINISTRATION**

**Public Information Coordination**

Subject to the Freedom of Information Act (5 U.S.C. 552), decisions on disclosures of information to the public regarding projects and programs referenced in this MOU shall be made by the DOE following consultation with the other parties' representatives.

**Amendment and Termination**

This MOU may be amended by the mutual written agreement between DOE and signatories. This MOU may be terminated by the mutual written agreement of DOE and signatories. Signatories may terminate individual participation upon a 30-day written notice.

**Effective Date**

This MOU shall become effective upon the latter date of signature of the parties and shall remain in effect for a period of 5 years, upon which the MOU becomes eligible for renewal.

**MOU Signatories**

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*Name, Title*  
*Company/Entity*

## **VI. ATTACHMENTS**

### **A. CHRONOLOGY OF STAKEHOLDER MEETINGS**

February 18, 2000:

The Granite State Clean Cities Coalition had its first informational meeting in the city of Nashua. The national Clean Cities program was explained and feedback from those attendees indicated a need for them to learn more about the available technologies and products on the market. The concept of Working Groups was explored and categories that made sense for the current attendees were listed. Commitment to being an active stakeholder in the GSCCC was also explained and requests were made for each participant to bring one additional interested party to the next meeting, if possible.

March 30, 2000:

The Granite State Clean Cities Coalition had its first informational meeting in the city of Portsmouth. As in Nashua, the national program was explained and the concept of working groups was presented. It was made again clear through attendee feedback that education of types and attributes of AFVs available for the Granite State was very necessary before commitments to procurement and deployment could be made. This set the stage for the next meeting, which was to have a good cross section of vehicle types and infrastructure issues presented by experts and local representatives.

April 24, 2000:

This meeting was held in Nashua. The main topic centered around current projects the state is involved in, funding sources, and technologies that make the most sense for the Granite State. Presentations to the stakeholders were made by KeySpan Energy and Alternative Vehicle Service Group (AVSG) on the topic of vehicles and infrastructure. Discussion also took place of a project to place three hybrid-electric propane powered buses into transit fleets. Plans to submit this project were disclosed by the Governors Energy Office. This project was submitted to DOE on April 26<sup>th</sup>, 2000. Funding was not awarded. Since propane is one of the major AFV fuels in the Granite State, alternative funding sources have been researched for this project. It is hoped that deployment of this cutting edge technology will help transit agencies throughout the Granite State to identify propane as a viable AFV fuel and realize its benefits.

May 1, 2000:

This meeting was held in Portsmouth. This meeting started with an update of projects that are under development by the state and partners who have committed to participate from the greater Portsmouth area. The NH Rebuild America program and the upcoming Clean Cities Conference to be held in San Diego was discussed. Efforts to place CNG vehicles and infrastructure at Pease Tradeport was discussed and possible projects at Manchester Airport was also reviewed. A stakeholder meeting followed with primary discussion of how the membership would like the working groups to be set up and how the coalition should be run.

May 7-10, 2000 Clean Cities Conference:

This conference showcased the many successful coalitions that have been formed around the country. Representation of existing coalitions and evolving coalitions was extensive. Presence of AFV providers and well as Alt fuel suppliers was very impressive, especially the large number of Propane suppliers and representative associations present.

June 6, 2000:

This meeting was held in Nashua. This was an upbeat meeting with Four main topics. Granite State Clean Cities Coalition in the news, report on the annual Clean Cities Conference that took place in San Diego in May, and legislative updates and activities in Washington and Concord NH. The final topic was a brainstorming session on the GSCCC; what will it do for you and what are the goals. It was agreed upon that the GSCCC will provide clean effective sustainable fuel sources, legislative support to help create incentives for AFVs, funding for long term coalition grants, and new technology information. The goals should be to create projects for stakeholders to commit to, search for funding/grant sources, acquire AFVs as able to, and stay abreast of the state of the art in vehicle technology. All of these topics were interesting, informative and particularly of interest to the stakeholders. It was an example of the type of meeting that can help to gather momentum on the AFV front and carry over to the next scheduled meeting.

June 8, 2000:

This meeting was held in Portsmouth: New members were introduced who included the New Hampshire University (UNH) Wildcat Transit and the Strafford Regional Planning Commission. UNH was successful in obtaining a federal grant to procure AFVs for their campus. At this meeting, they discussed the timetable for this effort and the types of vehicles being investigated. It is most likely they will pursue CNG powered shuttle or transit buses with a fast full station on campus.

July 11, 2000:

This meeting was held in Nashua. The meeting was centered on the upcoming "Advancing the Choice" event to bring all the stakeholders together with presentations by experts in the AVF field and a ride and drive. At this time it was decided to see if the University of New Hampshire in Durham would host the event and other stakeholders were recruited to assist with organizing the logistics of putting on a successful day long meeting.

July 20, 2000:

This meeting was held in Portsmouth. Topic was to discuss the upcoming "Advancing the Choice" event to be held at the University of New Hampshire in September 2000. As with the previous stakeholder meeting in Nashua, request for ideas, and recruitment of personnel to assist in making the event a success was made.

August 16, 2000:

This meeting was held at the Department of Environmental Services in Concord. The purpose of the meeting was to have discussions and presentations by AFV infrastructure experts so attendees could become more familiar with the issues regarding procurement,

financing, and operation of this equipment. After the meeting, stakeholders attended the official opening of the State's first publicly owned compressed natural gas refueling facility in Concord. News media were on hand and several of the states CNG vehicles were refueled after the presentation ceremony.

September 26, 2000 Advancing the Choice:

As previously stated, this meeting was held at the University of New Hampshire. The alumni center was the site, with ample space set aside for ride and drives. The major focus of this event was on dedicated CNG, LPG and hybrid electric vehicles. State officials made morning presentations, Wildcat Transit at UNH, fuel suppliers, vehicle suppliers, and engine manufacturers. It was an excellent mini-conference that presented all the issues necessary for the average fleet operator to become familiar with and take home information regarding the state of the art in AFV technologies. After lunch, the weather held out and ride and drives in the Honda insight, Toyota Prius, dedicated CNG vans and pickup trucks were held from 1 PM to 3 PM. More than 150 people were in attendance.

November 27, 2000:

This meeting was held in Concord at ECS headquarters. The purpose was to discuss the Clean Cities Program plan for New Hampshire and start the process by which it could be organized and written for submission to DOE.

January 8, 2001:

This meeting was held at Manchester airport. Topic of discussion was to explore the possibility of submitting a proposal to the Federal Aviation Administration (FAA) for deployment of alternatively fueled vehicles and infrastructure at the airport via the Clean Airport Initiative under USDOT.

January 29, 2001:

This meeting was held in Concord at DES headquarters. It was called and chaired by the NH Sierra Club to discuss the process by which partnerships could be formed to investigate the replacement of diesel powered school and transit buses in the greater Concord area.

February 15, 2001:

This meeting was held at the City of Concord Transit headquarters. It was set up by the NH Sierra Club to meet with the School District and City personnel in charge of transit operations. The discussions centered around CNG powered buses, their performance and possible funding sources to assist with procurement and deployment into the fleet.

March 19, 2001:

This meeting was held at ECS headquarters in Concord. The Executive Committee for GSCCC reviewed and edited the first draft of the GSCC plan as written by Timeless Technologies.

April 10, 2001

This meeting was held at the University of New Hampshire in Durham. Seacoast

Stakeholders were invited to learn about efforts to create a funding source for AFVs and infrastructure through congressional contacts, and to review the first draft of the GSCCC Plan that was handed out to them.

May 24, 2001

This meeting was held at the University of New Hampshire in Durham. The purpose was to review the GSCCC Plan and to discuss the details regarding efforts to acquire funding through the Clean Formula Fleet Program (CFFP) to do clean bus projects in the state.

May 31, 2001

This meeting was held at DES in Concord. The purpose was to firm up estimated costs to do CNG bus project with the Concord Area Transit (CAT) and the Concord School District (CSD) under the auspices of the CFFP funding.

June 13, 2001

This meeting was held at ECS in Concord. The Executive Committee made final review and editing of the GSCCC Plan. It was suggested that the final version be emailed to all stakeholders for their final review before it is submitted to DOE. Plan completion date is targeted for mid July to submit to DOE.

## **B. STAKEHOLDER / COALITION LISTS**

1. **List of MOU Signatories:** The list below are stakeholders who have committed to be active participants in the coalition by purchasing AFVs or by assisting and supporting the expansion of existing AFV fleets and infrastructure in New Hampshire. The listed stakeholders will be signing the Memorandum of Understanding at the designation ceremony.

AEC Corporation  
AL Prime Energy  
Alternative Fuel Systems  
American Honda  
Appalachian Mountain Club  
AVSG  
Bell Power Systems  
City of Keene  
City of Manchester  
City of Nashua  
City of Portsmouth  
COAST Transit  
Concord Area Transit  
Energy North Propane  
Ford Motor Company  
FuelMaker Corporation  
General Motors  
Governor's Office of Energy and Community Services  
Hampton Shuttle  
Hilltop Chevrolet

Jacques Whitford Company, Inc.  
KeySpan Energy  
NH Department of Environmental Services  
NH Department of Transportation  
NH Sierra Club  
NH Technical Institute  
Northern Utilities  
Palmer Gas Company, Inc.  
Pease Development Authority  
Regal Limousine Service  
Schwans Sales Enterprises, Inc.  
Seacoast Metropolitan Planning Organization  
Suburban Propane  
The Grappone Companies  
Timeless Technologies  
Town of Durham  
University of New Hampshire  
World Energy

2. **Coalition Contact List:** [This link will take you to a listing of GSCCC stakeholders.](#)

### **C. GRANITE STATE AFV SURVEY FORM**

Below is a Questionnaire that was sent out to all stakeholders in order to obtain initial information regarding their AFVs and future plans for AFVs.

# Granite State Clean Cities Short Questionnaire

**Contact Name:** \_\_\_\_\_ **Name of Company:** \_\_\_\_\_  
**Address:** \_\_\_\_\_ **Phone:** \_\_\_\_\_  
 \_\_\_\_\_ **Fax::** \_\_\_\_\_  
 \_\_\_\_\_ **Email:** \_\_\_\_\_

1. **Type of Business/Agency:** \_\_\_\_\_
2. **Do you sell Alternative Fuel Vehicles?**  Yes  No
3. **Do you convert (\_\_\_\_) or maintain (\_\_\_\_) Alternative Fuel Vehicles for your own fleet (\_\_\_\_) or for outside customers (\_\_\_\_)? Check any that apply to your company.**
4. **Where is your fleet primarily located:** \_\_\_\_\_
5. **Number of vehicles in your fleet:**

	<u>Owned</u>	<u>Leased</u>
Heavy Duty (>26,000 lbs. GVW)	_____	_____
Medium Duty (15,000 to 26,000 lbs. GVW)	_____	_____
Light Duty (<15,000 lbs. GVW)	_____	_____

6. **Do any of these vehicles currently operate on alternative fuels?**  Yes  No  
 If so, indicate how many and type of fuel:

	<u>Heavy Duty</u>	<u>Medium Duty</u>	<u>Light Duty</u>
CNG	_____	_____	_____
Propane	_____	_____	_____
Ethanol	_____	_____	_____
Methanol	_____	_____	_____
Electric	_____	_____	_____
Other	_____	_____	_____

7. **Do you...**  
 Operate a public fueling facility  
 Operate a private fueling facility  
 Use a public access service station

8. **Please estimate how many alternatively fueled vehicles you think you will have by 2006?**  
 Gasoline  Diesel  CNG  Propane  Electric  Other

**Please fax this page back immediately to David Dilts at (603) 772-8238 or Mail to Timeless Technologies, 41 Brentwood Road, Exeter, New Hampshire 03833**

**D. GRANITE STATE AFV AND INFRASTRUCTURE MAP**



**Target Area 1: Seacoast Region (Portsmouth, Durham)**

**Refueling (3 CNG, 10 LPG, 5 EV)  
AVFs (2 CNG, 49 LPG, 5 EV)**

**Target Area 2: Merrimack Region (Concord, Nashua  
Manchester)**

**Refueling (3 CNG, 6 LPG, 7 EV)  
AVFs (25 CNG, 114 LPG, 12 EV)**

